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formulate such observations, in order that science may not be brought to do mischief. It will be in point if I mention a practical instance or two. When the Delaware grape-vine first came into market, I bought a young vine. It had a large root, but it was a cutting from the tip-end of the branch. The cupidity of the trade spared no part of the branch in making cuttings. The result was that after nursing my vine for several years, it was still a worthless, feeble plant. At the time of the introduction of the Lawton blackberry, a farmer not far away raised a plantation of the canes, and offered them for sale at a round price, from which he would not deviate. A farmer bargained with him at a fixed price per thousand for a part of the plantation. This was in spring. It was agreed that the plants, without any extra cost to the buyer, should be allowed to stand until fall, till which time the purchaser should be allowed to do anything he pleased to or with the plants. In a word, he bought that part of the plantation. To the dismay of the dealer, his patron came at the proper time with an immense number of little forked sticks; and, taking one of them in one hand and bending down the tip-end of a cane with the other, he pinned it firmly to the ground. This was done with his entire purchase. He then advertised a stock of Lawtons for sale in the fall, mixing the feeble plants begotten from the tips in with the stronger ones. I heard that this bit of sharp practice proved a good "spec." The original planter in his chagrin declared it a "*tip-top* fraud."

Freehold, N. J.

SAMUEL LOCKWOOD.

§ 37. **Plants and Plant-Stations.**—A station for *Zygadenus glaucus*, Nutt., in Central New York, given in the September number of the BULLETIN, recalls another locality, Mumford, Genessee Co., in the western part of the State, where this and other interesting plants may be found. While passing a few days in the vicinity, in the summer of 1879, a visit to the fish-breeding station of the New York Fish Commission led to my botanizing in the adjoining woods and marsh. Some remarks on the flora, and a comparison of the habits of a few plants with what I have seen in other localities, may prove of interest to the readers of the BULLETIN. It was like being placed in some familiar spot in the Northwest, farther up the St. Lawrence System, and such as may be found in the north part of Michigan. At Mumford there is a cedar swamp, through which runs a stream of clear, cool water called Spring Creek. This starts from large springs at Caledonia, a short distance above, and is fed by numerous little streams from springs which burst out of the limestone ledge or ridge to the south of it. Its course of about three miles is mainly along by or through the swamp to its outlet in the Oatka, where, as well as at Caledonia, it furnishes the water for several mills. This cool stream is the natural home of the speckled trout, and the waters from it and the rills from the rocks of limestone have deposited in the bogs and swamp an abundance of travertine, thus in some places partially drying the ground. Hence a varied flora. One finds the living plant, and, if geologically inclined, can dig into the rocks of travertine and find it fossilized.

Zygadenus glaucus, of which but few specimens were found, grew by the margin of the creek. This contrast in habitat and surroundings, with those of localities where I had found it at Petoskey, Mich., by the shore of Little Traverse Bay, could not fail to be noticed. While collecting in different parts of the country, I have frequently met with like surprises, such as finding *Cypripedium spectabile* on hill-sides or hill-tops, in Southeastern Minnesota, or *Lobelia Kalmii* on the rocks at Niagara Falls, but, on the contrary, in wet sands near the south end of Lake Michigan. At Petoskey, *Z. glaucus* grows in the dry sand, close by the sand-ridges made by the winds along the shores of the bay. It is on the edge of a forest of pines (*Pinus Strobus* and *P. resinosa*), and its smaller neighbors are such plants as *Campanula rotundifolia*, L., var. *linifolia*, Gray, *Vaccinium Canadense*, Kalm, (the form which approaches *V. Pennsylvanicum*) and the characteristic plants of pine woods. Close by, in the more shifting sands of the shore, grow *Triticum dasystachyum*, Gray, *Cirsium Pitcheri*, Torr. and Gray, *Solidago Virga-aurea*, L., and *Juniperus Sabina*, L., var. *procumbens*, Pursh. The *Cirsium* and the *Solidago* grow together in the sands at the head of the lake, but the *Zygadenus* I do not find. Gray's Manual gives Bergen Swamp, Genesee Co., a cedar swamp about ten miles west of Mumford, as a station for *Z. glaucus*.

Another plant of interest, for these and other reasons, was *Parnassia Caroliniana*, Michx., growing on the thin soil of rocks and fallen timber by the water-side. At Englewood, just south of Chicago, it is abundant on the sandy and originally wet prairie, which is now dry through drainage. It is very common in the sandy ground beside the "sloughs" in the pine barrens of Indiana, at the south end of Lake Michigan. In Northern Michigan I have found it under conditions similar to those near Mumford—by the borders of streams in cedar swamps, or rooted in the soil of fallen timbers which span, and in places, almost conceal from sight the streams of cold water. Its companions there were such plants as *Valeriana sylvatica*, Richards, *Cystopteris bulbifera*, Bernh., (with fronds often two or three feet long), *Halenia deflexa*, Grisebach, *Moneses uniflora*, Gray, *Mitella nuda*, L., and such mosses as *Meesia uliginosa*, Hedw., *Mnium serratum*, Brid., *Dichelyma capillaceum*, Dill. (floating), and *Hypna* of many kinds. Fifty miles south of Chicago, at Kankakee, Ill., I have found it in the wet clay of the river banks, and among plants widely different—a common one being *Juncus Canadensis*, J. Gay, var. *coarctatus*, Engelm. At Mumford, one of its near neighbors was *Ranunculus Pennsylvanicus*, L. To enumerate all the plants that grow with it in the prairies, from *Hypoxis*, *Sisyrinchium* and the violets of spring to the Gerardias, Asters and Solidagos of summer and fall, would require quite a catalogue; and, were the pine-barren plants added, the list would be far more extended. In all these stations, widely separated, there are analogous but varied conditions. This study of a plant's company and environment is one of the most pleasing and profitable parts of collecting. How different are the plants of a cedar-swamp, a pine-barren, a prairie, a clay-bank and of a boulder of water-limestone. Yet this little plant, *Parnassia*, finds a home in each, and doubtless is to be found under many other condi-

tions equally suggestive. It cannot be said that every plant at least is known by the company it keeps.

Another plant gathered by Spring Creek was *Potentilla fruticosa*, L., which is abundant in the swamps and wet sands by our lakes, and throughout Michigan. In the dryer places of the swamp occurred the pretty *Linnaea borealis*, Gronov., which is common across the lake in Michigan, and also to be found at Pine Station, Lake Co., Ind., fifteen miles east of Chicago. This is the most southerly station of which I am aware for this plant, away from mountains or hills. The region at the head of Lake Michigan is a meeting-place for plants from many directions; and, in consequence, furnishes a remarkably varied and interesting flora.

Two more of the plants of Mumford called to mind the Lake Michigan flora; these were *Juncus Balticus*, Dethard, (abundant in all moist sands on or near the shores) and *J. Canadensis*, J. Gay, var. *brachycephalus*, Engelm., quite often met with here. Nor should the stations be omitted of two ferns, in localities not far away. One of these, *Camptosorus rhizophyllus*, Link, is common on ledges of limestone in the eastern part of Le Roy, Genesee Co., in the deep ravines of a forest locally known as the "North Woods." The other, *Botrychium lanceolatum*, Angstroem, is sparsely found in woods in the south part of Attica, Wyoming Co.

Englewood, Ill.

E. J. HILL.

§ 38. **Note on the Round-leaved Violet.**—Mr. Robinson's "Flora of Essex County" is in error in stating that that county is the southern limit, in Massachusetts, of *Viola rotundifolia*. This plant occurs in the vicinity of New Bedford, some sixty or seventy miles further south, in a single locality, in which, within the past few years, it appears to have become more abundant.

New Bedford, Mass.

H. W.

§ 39. **Apparent Parasitism of *Listera australis*.**—I send a few green specimens of *Listera australis*, which has been blooming since the middle of the present month (February). Last winter the plants flowered in January, I think, (Chapman says July). This plant seems almost *semi-parasitic* on *Osmunda cinnamomea*, from the *root-stocks* of which these specimens were dug.

Bluffton, S. C., Feb. 20, 1881.

J. H. MELLICHAMP.

§ 40. **Woodwardia angustifolia in Michigan.**—Last September I was shown a sterile frond of a fern collected at South Haven, Mich., by Mrs. L. A. Millington, which she supposed to be *Woodwardia angustifolia*, Sm. A few days later I found a patch of the same, containing well-developed fertile and sterile fronds, in a dark, damp and forbidding hemlock forest, fourteen miles south of South Haven. It was *W. angustifolia*, the rare fern of the Atlantic seaboard. The localities where it was found were on the eastern shore of Lake Michigan, in densely shaded lowlands. Only a single isolated patch was discovered, about two feet wide by twenty long.

South Haven, Mich.

L. H. BAILEY, JR.